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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/161,277	09/28/1998	EIICHI YOSHIDA	44084-326	7422

20277 7590 08/27/2002

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EXAMINER	
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ART UNIT	PAPER NUMBER
2624	16

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 16

Application Number: 09/161,277
Filing Date: September 28, 1998
Appellant(s): YOSHIDA ET AL.

MAILED

AUG 2 7 2002

Technology Center 2600

Edward J. Wise
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/03/02.

(1) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(2) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(3) Summary of Invention

The summary of invention contained in the brief is correct.

(4) Issues

The appellant's statement of the issues in the brief is correct.

(5) Grouping of Claims

Appellant's brief includes a statement that claims do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

Claims 1-6, 9-13 and 15 stand or fall together as each of independent claims 1, 9, 13, and 15; and claim 16 stands alone.

(6) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) Prior Art of Record

5,716,148	Tamagaki	2-1998
5,791,790	Bender et al.	8-1998

(8) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6, 9-13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamagaki in view of Bender. This rejection is set forth in prior Office Action, Paper No. 8.

As to claim 1, Tamagaki teaches an image forming apparatus (10 in fig. 4) that performs printing based on data sent from an external terminal device (70 in fig. 4) via a network (see network in fig. 4) comprising:

storage means (i.e., back-up memory 65 in fig. 6) which stores print-job-processing-status information of a print job (col. 10, lines 47-49);

determining means (i.e., controller section 67 in fig. 6) for determining, when the image forming apparatus has been restored to a normal state (i.e., the trouble solving process is completed in step of S72 in fig. 11), whether each job remain to be printed based on the print job processing status information stored in the backup memory (col. 10, lines 59-65);

resend request issuing means (i.e., controller section 67 in fig. 6) for requesting the terminal device (i.e., host device 70 in fig. 6, and steps of S76 and S77 in fig. 11) that sent data of a respective print job to resend the data for each job that it is determined remains to be printed (step of S78 in fig. 11 and col. 10, line 65 through col. 11, line 6).

However, Tamagaki does not teach storage means, which stores processing status information of a print job, is a non-volatile memory for storing the processing status information of a plurality of print jobs.

Bender, in the same field of endeavor, teaches a non-volatile memory which stores processing status information of a plurality of print jobs (col. 4, lines 46-67; note: Header files are stored in the non-volatile memory, which contains the status information about print jobs,

will be inspected) and provides this information to the host computer via a network (i.e., LAN1 in fig. 1, col. 4, lines 53-59).

It would have been obvious to have modified the system of Tamagaki for storing processing status information of print jobs by a non-volatile memory as taught by Bender. The suggestion of modifying the system of Tamagaki can be reasoned by one of ordinary skill in the art as set forth by Bender because 1) both of Tamagaki and Bender are the same area of saving the collected status information of the print job in a memory of the printer during the power failure of the printer occurs; 2) the advantage of using the non-volatile memory based on the teaching of Bender would eliminate the need of the power source attached to the memory.

As to claim 2, Tamagaki teaches the restoration in the determining means is a power restoration after a shutdown (col. 13, lines 3-4).

As to claim 3, Tamagaki teaches job id information supply means for providing job id information to each print job data sent from the external device (col. 10, line 65 through col. 11, line 2).

As to claim 4, Tamagaki teaches wherein the resend request issuing means requests to resend the data based on the job id information of the outstanding print job.

As to claim 5, Tamagaki teaches wherein the non-volatile memory stores the job id information with a terminal device id which send data of the job (col. 10, line 65 through col. 11, line 2).

As to claim 6, Tamagaki teaches wherein the data includes information of print request and a print data (col. 11, lines 33-37).

As to claim 9, Tamagaki teaches an image forming apparatus (10 in fig. 4) that performs printing based on data sent from an external terminal device (70 in fig. 4) via a network (see network in fig. 4) comprising:

the image forming apparatus (10 in fig. 6) including:

storage means (i.e., back-up memory 65 in fig. 6) which stores print-job-processing-status information of a print job (col. 10, lines 47-49);

determining means (i.e., controller section 67 in fig. 6) for determining, when the image forming apparatus has been restored to its normal state (i.e., the trouble solving process is completed in step of S72 in fig. 11), whether or not any job remain to be printed based on the print job processing status information stored in the backup memory (col. 10, lines 59-65);

transmitting means (i.e., controller section 67 in fig. 6 and S76 and S77 in fig. 11) for sending information to request a terminal device (70 in fig. 6) that sent data of a respective print job to resend the print data for each job that is determined remains to be printed (col. 10, line 65 through col. 11, line 6).

the terminal device (70 in fig. 6) including:

receiving means (S104 in fig. 13) for receiving a data resend request sent from the image forming apparatus (col. 11, lines 34-37) when the image forming apparatus has been restored to its normal state (i.e., the trouble solving process is completed in step of S72 in fig. 11);

data resend means (S106 in fig. 13) for resending the data in response to the resend request (col. 11, lines 39-41).

However, Tamagaki does not teach storage means, which stores processing status information of a print job, is a non-volatile memory for storing the processing status information of a plurality of print jobs.

Bender, in the same field of endeavor, teaches a non-volatile memory which stores processing status information of a plurality of print jobs (col. 4, lines 46-67; note: Header files are stored in the non-volatile memory, which contains the status information about print jobs, will be inspected) and provides this information to the host computer via a network (i.e., LAN1 in fig. 1, col. 4, lines 53-59).

It would have been obvious to have modified the system of Tamagaki for storing processing status information of print jobs by a non-volatile memory as taught by Bender. The suggestion of modifying the system of Tamagaki can be reasoned by one of ordinary skill in the art as set forth by Bender because 1) both of Tamagaki and Bender are the same area of saving the collected status information of the print job in a memory of the printer during the power failure of the printer occurs; 2) the advantage of using the non-volatile memory based on the teaching of Bender would eliminate the need of the power source attached to the memory.

As to claim 10, Tamagaki teaches the restoration in the determining means is a power restoration after a shutdown (col. 13, lines 3-4).

As to claim 11, Tamagaki teaches job id information supply means for providing job id information to each print job data sent from the external device (col. 10, line 65 through col. 11, line 2).

As to claim 12, Tamagaki teaches wherein the receiving means receives job identification information with the resend request, and the data resend means resend the data corresponding to the job identification information (col. 10, line 66 through col. 11, line 2).

As to claim 13, the combination of Tamagaki and Bender teaches the method including resuming printing based on the resend data sent from the terminal device (col. 11, lines 2-5) is performed by the apparatus claim 1 as indicated above.

As to claim 15, the combination of Tamagaki and Bender teaches the method is performed by the apparatus claim 9 as indicated above.

As to claim 16, Tamagaki teaches an image forming apparatus (10 in fig. 4) that performs printing based on data sent from an external terminal device (70 in fig. 4) via a network (see network in fig. 4) comprising:

Storage means (i.e., a backup memory 65 in fig. 6) which stores printing processing information of print job (col. 10, lines 47-49), the printing processing information for each print job including job identification, image data address, and job status indicating whether or not a print job has been printed (col. 12, line 62 through col. 13, line 4);

a volatile memory which stores image data (i.e., image data read from a data storage section 54 in fig. 3, col. 4, line 24 and col. 7, lines 36-43, note: a data storage section 54 would be a volatile memory) corresponding to each print job at the image data address specified by the backup memory , the volatile memory subject to loss of all data when power is not supplied thereto (note., print data in the memory 54 inherently is lost due to power be turned off, col. 10, lines 61-62, col. 12, lines 62-67);

determining means (i.e., controller section 67 in fig. 6) for determining when supply of power to the volatile memory has been interrupt, and when power has been restored to the volatile memory, determining whether there are any print jobs that have not been printed based on the job status information stored in the backup memory (col. 12, line 63 through col. 13, line 4 and col. 10, lines 59-65);

resend request issuing means (i.e., controller section 67 in fig. 6 and S76 and S77 in fig. 11) for requesting the terminal device (70 in fig. 6) that sent the image data of a respective print job that has not been printed to resend the image data for storing in the volatile memory (col. 10, line 65 through col. 11, line 6).

a controller which, when power is restored to the volatile memory after being interrupted and the determining means determines that there are any print jobs that have not been printed (col. 12, line 63 through col. 13, line 4), clear the respective image data address in the non volatile memory prior to the image data being resent by the corresponding terminal device (note: since the print data being resent from the host to the printer, any previous information for that job in the backup memory does not need, therefore that information would be clear).

However, Tamagaki does not teach that the storage means, which stores processing status information of a print job, is a non-volatile memory for storing the processing status information of a plurality of print jobs.

Bender, in the same field of endeavor, teaches a non-volatile memory which stores processing status information of a plurality of print jobs (col. 4, lines 46-67; note: Header files are stored in the non-volatile memory, which contains the status information about print jobs,

will be inspected) and provides this information to the host computer via a network (i.e., LAN1 in fig. 1, col. 4, lines 53-59).

It would have been obvious to have modified the system of Tamagaki for storing processing status information of print jobs by a non-volatile memory as taught by Bender. The suggestion of modifying the system of Tamagaki can be reasoned by one of ordinary skill in the art as set forth by Bender because 1) both of Tamagaki and Bender are the same area of saving the collected status information of the print job in a memory of the printer during the power failure of the printer occurs; 2) the advantage of using the non-volatile memory based on the teaching of Bender would eliminate the need of the power source attached to the memory.

(9) Response to Appeal Brief

Appellant argued in page 5 of the Appeal Brief that "Appellant submit that Bender teach away from the present invention and the arrangement of Tamagaki. More specifically, Bender teach that a (preferred printer stores all the print job data in a 'non-volatile memory' so that when power is lost before a particular print job has been entirely printed, this fully buffered print job will remain in the non-volatile memory indefinitely until the power is restored. No other use of a non-volatile memory is disclosed or suggested in Bender. Such use of a non-volatile memory is similar to that discuss above in the Summary of Invention, and requires a large capacity non-volatile memory to store the printing data, which is not required by the present invention". The argument has been fully considered but is not deemed to be persuasive because of the following reasons:

1) Microsoft Press Computer Dictionary (third edition, Copyright @ 1997 by Microsoft Corporation) defines, in page 332, that nonvolatile memory is a storage system that does not lose data when power is removed from it. Intended to refer to core memory, ROM, EPROM, flash memory, bubble memory, or battery-backed CMOS RAM, the term is occasionally used in reference to disk subsystem as well.

Newton's Telecom Dictionary by Harry Newton (updated 15th expanded edition) also defines, in page 545, the nonvolatile memory is a memory that does not lose data when the power is shut off.

In general, the nonvolatile memory just is a common term for the specified memories, which are well known in the prior art such as ROM, EPROM, flash memory, bubble memory or battery-backed CMOS RAM, which store any desired data such as the program data or status information data and which does not lose data when power is shut off.

Based on the definition of Microsoft Press Computer Dictionary, the combination of the back-up power source 66 attached to the back-up storage section 65 in Tamagaki could be considered as a non-volatile memory, because the combination performs the similar function as the nonvolatile memory of Bender. That is the status information of the print job is saved and it is not lost in the backup memory 65 during the printer failure.

2) the different size of the memory is used based on the desired data that is stored. In case of Tamagaki, the small capacity of the memory 65 is used in order to backup only the host identification code and the data identification code (col. 12, lines 29-36). In case of Bender, the large capacity memory is used in order to backup any received print jobs and status information of those received print jobs and to recover entire jobs upon power restoration. The large memory

or small memory, which is used based on the desired data that is stored, is merely a matter of choice and would have been obvious in the system of Tamagaki. The memory 65 in Tamagaki, which being used as a backup memory having a power source 66, would have been obvious to one of ordinary skill in the art to be replaced by the nonvolatile memory without a power source of Bender for saving only the status information of the print job as taught by Tamagaki in order to eliminate the need of the power source attached to the backup memory.

Appellant argued in page 6 of the Appeal Brief that "However, such contention is clearly based upon improper hindsight reconstruction of the claimed invention, as Bender specifically disclose that the '**non-volatile memory**' stores all the print job data, not just a part of it. Given such disclosure, a person in which Bender teach to used it; i.e., to store all the print job data. Therefore, if the arrangement of Tamagaki were modified in view of the teaching of Bender, Tamagaki would be modified to provide a non-volatile memory to receive all the print job data, negating the need for a resend request to be sent after power is restored since none of the data will be lost as a result of power to the printer being interrupted"; and in page 8 of the Appeal Brief " Thus, unless the Examiner can identify a portion in Bender that discloses or suggest that such non-volatile memory need only store status information, the Examiner suggestion to use it in such manner clearly evinces reliance upon improper hindsight considerations to reject the claims". The argument has been fully considered but is not deemed to be persuasive because based on the definition of the nonvolatile memory from Microsoft Press Computer Dictionary and Newton's Telecom Dictionary, the nonvolatile memory is a memory that does not lose data

when power is removed from it. The primary reference of Tamagaki discloses the same concept of backing up memory 65 for saving the status information of the print job; and Bender also teaches all of print job data (i.e., information of the print jobs including status information which the primary reference teach the storing of only status information in the backup memory) received by the preferred printer of his invention is stored in a non-volatile memory, the capability exists for recovering such print jobs after the occurrence of a power failure (col. 4, lines 46-49). Since the status information of the print job remains in the nonvolatile memory, the printer of Bender communicates and sends a message to the originating host computer that essentially allows the host computer to be assured that the job ultimately will be printed (col. 4, lines 54-59). Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tamagaki in order to change his backup memory, which is attached to the power source, by using the non-volatile memory as taught by Bender. The advantage of using the non-volatile memory in Bender would eliminate the need of the power source attached to the memory.

Appellant argued in page 9 of the Appeal Brief that " Tamagaki discloses a resend request **only to resend the data of <u>one</u> job**. Consequently, Tamagaki does not disclose or suggest the 'determining means' and the 'resend request issuing means' recited in claim 1.". The argument has been fully considered but is not deemed to be persuasive because Tamagaki clearly teaches:

1) determining means (i.e., controller section 67 in fig. 6) for determining, when the image forming apparatus has been restored to a normal state (i.e., the trouble solving process is

completed in step of S72 in fig. 11), whether each job remain to be printed based on the print job processing status information stored in the backup memory (col. 10, lines 59-65); and

2) resend request issuing means (i.e., controller section 67 in fig. 6) for requesting the terminal device (i.e., steps of S76 and S77 in fig. 11) that sent data of a respective print job to resend the data for each job that it is determined remains to be printed (step of S78 in fig. 11 and col. 10, line 65 through col. 11, line 6).

Tamagaki discloses a plurality of the host devices connected to a printer via a network (see fig. 4), each of the host devices can send at least one print job, a printer 10 can store a plurality of print jobs from a plurality of the host devices via a network. Thus, the backup memory would store at least one job from one of the host computer (70 in fig. 4), if more one of the host computers delivers the print jobs to the shared printer (10 in fig. 4), the backup memory (65 in fig. 6) should store the status information of more one of the print jobs. Tamagaki also teaches requesting information send to the host computer including the host device identification code and data identification code (step of S 77 in fig. 11). Therefore, it is understood that Tamagaki discloses a resent request to resend the data of at least one print job from at least one host computer via a network.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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August 14, 2002

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